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10/802,241	03/17/2004	John F. Fritskey	VSSZ 2 00011	5143

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EXAMINER

PHILLIPS, FORREST M

ART UNIT	PAPER NUMBER
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2837

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/802,241	Applicant(s) FRITSKEY ET AL.	
	Examiner Forrest M. Phillips	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien (US 5266755) in view of Crowe (US6138935), Shea (US590904), and Japanese patent (JP06185356).

With respect to claim 1 Chien discloses a muffler: comprising a housing having a first section (1 in figure2) and a second section (33 in figure2) selectively removable from the first section, the first section including a side wall and an end wall (12 in figure 2) defining a chamber the end wall including an opening (22 in figure 2) in communication with the chamber, and an annular flange (unnumbered but seen in figure 2 where the second section fastens to the first) disposed at an end of the side wall opposite the end wall (12 in figure 2), the second section including an end wall (33 is an end wall) and a conduit extending away from the end wall (5 in figure 2) the conduit being in communication with the chamber, a selectively removable insert (4 in

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figure 2) received in the chamber, a sound diffuser in the chamber (perforate portion of 5) ; a coupling (18 in figure 2) for selectively attaching the first section of the housing to the second section of the housing.

Chien does not disclose wherein the second section has an annular flange, the selectively removable insert comprising a spacer, the sound diffuser being part of the insert, wherein the spacer spaces the sound diffuser from the side wall of the housing, wherein the spacer abuts the sidewall of the housing; or the coupling comprising a continuous band and cooperating first and second fastening elements disposed on opposed ends of the band for drawing the ends of the band towards each other to hold the first and second sections of the housing together.

Crowe discloses a muffler wherein a second section having an end wall (6 in figure 1), an annular flange (7 in figure 1) and a conduit (38 in figure 1) extending away from the end wall, conduit being in communication with the chamber; a coupling (47 in figure 1) comprising a band and cooperating first and second fastening elements (51 in figure 1) disposed on opposite ends of the band for drawing the ends of the band toward each other to hold the first and second sections of the housing together.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Crowe to use a band shaped clamp to hold the two sections together with Chien to provide a more even distribution of the stress around the flange.

Chien in view of Crowe does not disclose wherein the band is continuous; or a spacer for the diffuser.

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Shea discloses the use of a continuous band clamp in a flange joint (20 in figure 1a) having first and second fastening elements disposed on opposed ends of the band to draw the band together (shown best in figure 3a).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Shea to use a continuous band clamp with the muffler of Chien in view of Crowe.

The motivation for doing so would have been that the continuous band does not pinch the metal of the joint the way a discontinuous or split clamp can where the split closes on the pipe.

The Japanese patent discloses a muffler having a selectively removable insert comprising a sound diffuser (5 in figure 2) and a spacer (14 in figure 2) for spacing the diffuser from the wall and abutting the sidewall.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of the Japanese patent to use a spacer to space the diffuser from the sidewall with the muffler of Chien in view of Crowe and Shea.

The motivation for doing so would have been to support the diffuser and prevent rotation of the diffuser while installing and thus simplifying the installation and fastening process.

With respect to claim 2 The Japanese patent further discloses wherein the spacer comprises a first rib (15 in figure 2) attached to a sound diffuser, wherein the muffler further comprising a second rib (15 in figure 2) attached to a sound diffuser and

spaced from the first rib, wherein the ribs extend approximately parallel to the longitudinal axis of the housing.

With respect to claim 5 The Japanese patent further discloses wherein the ribs of the removable insert (15 in figure 2) abut the end wall of a second section when the second section attaches to the first section.

With respect to claim 7 Crowe further discloses wherein the coupling comprises a ring-shaped member (47 in figure 1).

Claims 3-4 rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe, Shea and the Japanese patent as applied to claim 2 above, and further in view of McCurdy (US2222876).

With respect to claim 3 Chien in view of Crowe, Shea and the Japanese patent disclose the muffler as claimed except wherein the ribs are rectangular in a cross section taken normal to the longitudinal axis and the ribs attach to the sound diffuser at a narrower side of the ribs.

McCurdy discloses wherein the ribs (9 in figure 1) are rectangular in a cross section taken normal to the longitudinal axis and the ribs attach to the sound diffuser at a narrow side of the ribs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of McCurdy to have a rectangular cross sectional rib with the muffler structure of Chien as modified.

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The motivation for doing so would have been to simplify the construction of the ribs.

With respect to claim 4 McCurdy further discloses wherein each rib abuts the sidewall along the entire length of the rib (figure 2).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of McCurdy to have the rib contact the sidewall along its entire length with the muffler structure of Chien as modified, to provide support to the entire insert.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe, Shea and the Japanese patent as applied to claim 2 above, and further in view of Ching-ho (US4890691).

With respect to claim 6 Chien in view of Crowe, Shea and the Japanese patent disclose the invention as claimed except wherein the spacer comprises a ring attached to the sound diffuser oriented normal to the longitudinal axis of the housing.

Ching ho disclose a muffler having a spacer comprising a ring (2 in figure 3) attached to a sound diffuser (32 in figure 3) oriented substantially normal to the longitudinal axis of the housing.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Ching-ho to use a ring shaped spacer with the muffler of Chien as modified.

The motivation for doing so would have been the simplicity of constructing a ring member as a spacer.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe, Shea, and the Japanese patent as applied to claim 2 above, and further in view of Ligman (US5500494).

With respect to claim 9 Chien as modified discloses the muffler of claim 2 but does not disclose wherein the sound diffuser comprises a coiled member including an elongate element having at least one U-shaped and a V-shaped cross section.

Ligman discloses wherein the sound diffuser comprises a coiled member (70 in figure 7) including an elongated element. While Ligman does not disclose expressly the u-shaped or V-shaped cross section, as various cross sections of spring are taught by Ligman it would have been obvious to one of ordinary skill in the art to use any cross section for the coiled member.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Ligman to use a coiled member as a sound diffuser with the muffler of Chien as modified.

The motivation for doing so would have been the adjustability of the coiled member as a sound diffuser, thus further enhancing the adjustable nature of the muffler of Chien as modified.

With respect to claim 10 as the stiffener is depicted and understood by examiner to be modified ribs, that have been scaled down to extend only a short length of the coiled member it is understood by examiner that the ribs would serve the same function

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as the stiffener and as the Japanese patent demonstrates more than 2 ribs the remaining ribs would be able to be shortened and thus result in a stiffener for the end of the coil being provided. This would be a change in size of a component and it has been held that a change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

With respect to claim 11 Ligman further discloses further comprising a plate (92 in figure 8) wherein the plate is situated adjacent an end of the diffuser wherein the plate blocks direct airflow along a longitudinal axis of the sound diffuser.

At the time of the invention it would have been obvious to one of ordinary skill in the art to utilize a plate at the end of a diffuser to force gas to pass through the diffuser as taught by Ligman. The arrangement of parts resulting from the use of a plate as taught by Ligman would have resulted in the plate being substantially normal to the spacer, as the spacer is substantially parallel to the longitudinal axis of the sound diffuser.

The motivation for utilizing the plate as taught by Ligman would be to ensure that the gas passed through the diffuser before passing out of the conduit and exiting the muffler.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe, Shea the Japanese patent and Ligman as applied to claim 11 above, and further in view of Ching-ho

Chien as modified discloses the invention as claimed except further comprising a ring attached to the spacer, wherein the ring is situated adjacent an end of the sound diffuser opposite the plate and the ring is situated substantially normal to the spacer.

Ching-ho discloses comprising a ring attached to the spacer (2 in figure 3) wherein the ring is situated adjacent an end of a sound diffuser (32 in figure 3) opposite a plate (3 in figure 3) whose purpose is to force the gas through the diffusing member, and the ring is substantially normal to the longitudinal axis of flow.

As the spacer of Chien as modified is parallel to the axis of flow the ring would subsequently be normal to the spacer.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Ching-ho to use a ring as a support member for a sound diffuser with the muffler of Chien as modified.

The motivation for doing so the simplicity of construction of a ring as a support member.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe, Shea and the Japanese patent as applied to claim 1 above, and further in view of Jones (US3200902).

With respect to claim 13 Chien as modified discloses the invention as claimed except wherein the insert comprises a first material having a first thermal expansion rate and the housing comprises a material having a second thermal expansion rate, wherein the first thermal expansion rate is greater than the second thermal expansion rate.

Jones discloses the use of materials having different thermal expansion rates as a means of securing a removable insert inside a muffler housing (column 3 lines 15-21).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Jones to use thermal expansion rates as a means of securing an insert within a muffler with the muffler of Chien as modified.

The motivation for doing so would have been the simplicity of securing the insert, requiring no further attachment means to secure the insert to the walls of the housing and thus reducing assembly time.

Claims 14,18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe and the Japanese patent.

With respect to claim 14 Chien discloses a muffler comprising: a housing including a side wall defining a chamber, a first section (1 in figure 2), a removable second section (33 in figure 2), an inlet opening (22 in figure 2) to allow exhaust to enter the chamber and an outlet opening (5 in figure 2) to allow exhaust to exit the chamber; a selectively removable insert (4 in figure 2) received in the chamber, a sound diffusing member, wherein when the removable second section of the housing is removed from the first section of the housing to provide access to the chamber the insert remains in the chamber; and a coupling for selectively attaching the housing first section to the housing second section.

Chien does not disclose wherein the sound diffuser is part of the insert, and as such would be retained in the chamber when the second portion of the housing was removed.

Crowe discloses a sound diffuser being a portion of a selectively removable insert with a sound diffuser (5 in figure 1) the sound diffuser being retained in the chamber even when the second portion (37 in figure 1) is removed from the first portion.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Crowe to have the sound diffuser be part of the insert with the muffler of Chien.

The motivation for doing so would have been to allow inspection of the diffuser without removal of the diffuser from the chamber.

Chien in view of Crowe does not disclose a spacing member, which engages the sidewall of the housing to space the sound diffusing member from the sidewall of the housing.

The Japanese patent discloses a spacer for spacing (14 in figure 2) for spacing the diffuser from the wall and abutting the sidewall.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of the Japanese patent to use a spacer to space the diffuser from the sidewall with the muffler of Chien in view of Crowe.

The motivation for doing so would have been to support the diffuser and prevent rotation of the diffuser while installing and thus simplifying the installation and fastening process.

With respect to claim 18 Crowe and Chien both disclose wherein the diffuser includes a cylindrical body including a plurality of holes. (5 in figure 2 of Chien) (5 in figure 1 of Crowe).

With respect to claim 19 Chien discloses sound altering material (4 in figure 2) interposed between the sound diffusing member and the sidewall of the housing.

Crowe also discloses sound altering material (10 in figure 2) interposed between the sound diffusing member and the sidewall of the housing.

With respect to claim 20 Crowe further discloses wherein said sound altering material includes fiberglass (column 2 lines 50-51).

With respect to claim 21 Crowe discloses wherein the housing first section includes a flange (4 in figure 1) and the housing second section includes a flange (7 in figure 1) wherein the flanges abut one another when the first section attached to the second section and the coupling contacts the flanges (column 5 lines 27-35).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Crowe to utilize such a clamping section with the muffler of Chien to provide a coupling, which distributes evenly the stress of coupling over both sections.

With respect to claim 22 Crowe further discloses wherein the coupling (47 in figure 1) includes a substantially ring shaped band having a first end (51 in figure 11) that is adapted to be drawn toward a second end (51 in figure 11) when the band is tightened.

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With respect to claim 23 Crowe further discloses wherein the coupling includes a first side wall and a second side wall, each side wall depending from the ring shaped band, wherein the first sidewall contacts the first flange and the second sidewall contacts the second flange when the coupling attaches the housing first section to the housing second section (column 5 lines 27-35).

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe as applied to claim 14 above, and further in view of Ching-ho.

With respect to claim 15 Chien in view of Crowe and the Japanese patent discloses the invention as claimed except wherein the spacing member comprises a ring oriented normal to a longitudinal axis of the housing.

Ching-ho discloses wherein the spacing member (2 in figure 3) comprises a ring oriented approximately normal to a longitudinal axis of the housing.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Ching-ho to use a ring shaped spacing member with the muffler of Chien in view of Crowe and the Japanese patent.

The motivation for doing so would have been the simplicity of manufacture of a ring shaped member.

With respect to claim 16 Ching-ho disclose wherein the ring includes a plurality of tabs (22 in figure 3).

It would have been a simple matter of rearranging parts to have the ring be central and the tabs extend outwardly therefrom rather than inwardly therefrom. Their function of support and the creation of flow paths would not have been altered.

It has been held that rearranging parts of an invention involves only routine skill in the art. In re Japiske, 86 USPQ 70.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe the Japanese patent and Ching-ho as applied to claim 15 above, and further in view of McCurdy.

With respect to claim 17 Chien as modified discloses the invention as claimed except wherein the ring includes a plurality of extensions projecting approximately normal to the ring.

McCurdy discloses projection in the longitudinal direction of the muffler, which is normal to the ring as disclosed in Ching-ho, which are used to support the diffusing means.

While McCurdy does not disclose explicitly the ribs being used to locate the diffusing means in a longitudinal direction it would have been obvious to one of ordinary skill in the art to size these ribs such that they would have been sufficient to do so.

At the time of the invention it would have been obvious to one of ordinary skill in the art to the teachings of McCurdy to use ribs with a ring structure as taught by Ching-ho and incorporate this with the muffler of Chien as modified,

The motivation for doing so would have been to provide means to support the diffuser in both the diametric and longitudinal directions using a known structure.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe.

With respect to claim 24 Chien discloses a muffler comprising: a housing having a sidewall defining a chamber, the housing including a first section (1 in figure 2) and a removable second section (33 in figure 2), a selectively removable insert (4 in figure 2) received in the chamber of the housing; and a coupling (18 in figure 2) for selectively attaching the housing first section to the housing second section.

Chien does not disclose wherein each of the first and second sections include a flange extending outwardly from the respective section; wherein the coupling includes a band having a first side wall depending from the band and a second sidewall spaced from the first sidewall and depending from the band, wherein the sidewalls contact the flanges when the coupling attaches the first housing section to the second housing section and wherein the flanges abut one another when the first section attaches to the second section when the coupling side walls are installed over the respective flange.

Crowe discloses wherein each of the first and second sections include a flange extending outwardly from the respective section wherein the coupling includes a band (47 in figure 1) having a first sidewall depending from the band and a second sidewall spaced from the first sidewall and depending from the band, wherein the sidewalls contact the flanges when the coupling attached the first housing section to the second housing section and wherein the flanges abut one another when the first section

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attaches to the second section when the coupling sidewalls are installed over the respective flange (column 5 lines 27-35).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Crowe to provide a band style coupler with the muffler of Chien to provide a means for coupling which distributes the stress of coupling equally about the two members.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chien in view of Crowe as applied to claim 24 above, and further in view of Ligman.

With respect to claim 25 Ligman discloses wherein the sound diffuser comprises a cylindrical coiled member (70 in figure 7).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Ligman to use a coiled cylindrical member as a sound diffuser with the muffler of Chien in view of Crowe to provide a further degree of adjustability of the muffler.

Response to Arguments

Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Forrest M. Phillips whose telephone number is 5712729020. The examiner can normally be reached on Monday through Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 5712721988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FP


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